

# THE ONCOLOGY CENTER OF CENTRAL BALTIMORE

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## INTRODUCTION

*COLORECTAL CANCER IS THE THIRD MOST COMMON CAUSE OF MORTALITY IN THE UNITED STATES. ITS INCIDENCE IS SECOND AFTER BREAST CANCER IN WOMEN AND LUNG CANCER IN MEN.*

*THERE HAVE BEEN MANY ADVANCES IN BOTH THE SCREENING AND TREATMENT OF COLORECTAL CANCER. IMPROVED SURGERY, RADIATION THERAPY AND CHEMOTHERAPY HAVE INCREASED THE CURE RATE IN EARLY STAGES OR PROLONGED SURVIVAL IN ADVANCED STAGES.*

*OUR CURRENT NEWSLETTER WILL **REVIEW** THOSE STANDARDS OF CARE IN SCREENING AND SURVEILLANCE AS WELL AS REVIEW SOME OF THE NEW THERAPIES FOR THE TREATMENT OF ADVANCED DISEASE. IN OUR CLINICAL TRIALS SECTION, WE HAVE PUBLISHED A LIST OF THE CURRENTLY AVAILABLE GASTROINTESTINAL CANCER TRIALS AT UNION MEMORIAL HOSPITAL.*

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## **NEW TREATMENTS IN ONCOLOGY rhuMab-VEGF (BEVACIZUMAB) A NEW MONOCLONAL ANTIBODY**

RECOGNITION THAT ANGIOGENESIS IS ESSENTIAL TO THE GROWTH OF SOLID TUMORS HAS LED TO THE IDENTIFICATION OF ANGIOGENIC FACTORS RESPONSIBLE FOR STIMULATING NEW BLOOD VESSEL FORMATION.

THE MOST POTENT OF THESE ANGIOGENIC FACTORS RECOGNIZED TO DATE HAS BEEN VEGF (VASCULAR ENDOTHELIAL GROWTH FACTOR). VEGF EXPRESSION HAS BEEN FOUND IN A VARIETY OF TUMORS INCLUDING LUNG, BREAST, THYROID, GASTROINTESTINAL TUMORS, KIDNEY, BLADDER AND OVARIAN.

A RECOMBINANT HUMANIZED VERSION OF A MURINE ANTI-HUMAN VEGF MONOCLONAL ANTIBODY CALLED rhuMAB-VEGF (BEVACIZUMAB) HAS BEEN DEVELOPED. IT HAS BEEN USED AT THE UNIVERSITY OF CALIFORNIA SAN FRANCISCO IN THE TREATMENT OF METASTATIC COLON CANCER.

IN A RANDOMIZED PHASE II STUDY WITH 102 PATIENTS, rhuMAB-VEGF WITH 5 FLUOROURACIL, RESULTED IN A HIGHER RESPONSE RATE AND LONGER TIME TO PROGRESSION WHEN COMPARED TO 5 FLUOROURACIL ALONE.

BEVACIZUMAB IS NOW AVAILABLE AT UNION MEMORIAL HOSPITAL AS PART OF A PHASE III STUDY FOR PATIENTS WITH METASTATIC COLON CANCER IN CONJUNCTION WITH CHEMOTHERAPY.

THE MAJOR SIDE EFFECTS NOTED SO FAR HAVE BEEN TUMOR ASSOCIATED BLEEDING, HYPERTENSION, PROTEINURIA AND THROMBOSIS.

BEVACIZUMAB IS ADMINISTERED INTRAVENOUSLY EVERY TWO WEEKS AS AN OUTPATIENT. THE PATIENT IS REGULARLY MONITORED WITH EXAMINATIONS, ROUTINE BLOOD TESTS, URINALYSIS, AND D-DIMER (FOR THROMBOSIS). SERUM rhuMAB-VEGF LEVELS AND PLASMA VEGF LEVELS ARE REGULARLY MEASURED AT NO EXTRA COST TO THE PATIENT.

AS OF NOW BEVACIZUMAB IS NOT BEING USED ROUTINELY OUTSIDE OF CLINICAL TRIALS. HOPEFULLY HOWEVER BECAUSE OF THE ONGOING CLINICAL TRIALS, BEVACIZUMAB WILL IMPROVE THE LIVES OF OUR METASTATIC COLON CANCER PATIENTS TREATED AT OUR ONCOLOGY CENTER.

## CLINICAL TRIALS

IN THE PAST THREE MONTHS WE HAVE BEEN OFFERING PATIENTS THE ABILITY TO PARTICIPATE IN NATIONAL CLINICAL TRIALS IN CONJUNCTION WITH THE SOUTHWEST ONCOLOGY RESEARCH GROUP (SWOG) AND THE WASHINGTON CANCER CENTER.

WE CURRENTLY HAVE APPROXIMATELY 20 ACTIVE PROTOCOLS AVAILABLE AT UNION MEMORIAL HOSPITAL

FOR A VARIETY OF DIFFERENT CANCER SITES AND STAGES.

THE CURRENT LISTING BELOW HIGHLIGHTS THE GASTROINTESTINAL PROTOCOLS WE ARE CURRENTLY INVOLVED WITH.

THE NEWEST AND MOST EXCITING PROTOCOL WE NOW PARTICIPATE WITH IS THE USE OF RHUMAB VEGF (VASCULAR PERMEABILITY ENDOTHELIAL GROWTH

FACTOR)- A MONOCLONAL ANTIBODY THAT INHIBITS ANGIOGENESIS IN HUMAN CANCERS.

A COMPLETE LIST OF PROTOCOLS AS WELL AS COPIES OF THOSE STUDIES ARE AVAILABLE TO YOU BY CONTACTING THE ONCOLOGY CENTER OR DOWNLOADING THEM FROM OUR WEBSITE: WWW.ONCOLOGYCENTER.ORG

SITE	PROTOCOL NUMBER	DESCRIPTION	STATUS	ACCRUAL
COLON (NEW)	AVF2107G	PHASE III RANDOMIZED TRIAL TO EVALUATE THE EFFICACY AND SAFETY OF RHUMAB VEGF (BEVACIZUMAB) IN COMBINATION WITH STANDARD CHEMOTHERAPY IN SUBJECTS WITH METASTATIC COLORECTAL CANCER	ACTIVE	0
COLON	C-07 NSABP	STAGE II,III COLON CANCER-ADJUVANT 5FU-LEUCOVORIN VS 5FU-LECOVORIN AND OXALIPLATIN	ACTIVE	0
COLON	70724-DRUG TRIAL	COMPASSION USE OF OXALIPLATIN FOR REFRACTORY METASTATIC COLON CANCER	ACTIVE	9
ESOPHAGEAL	99-692INTERNAL	TAXOL-CARBOPLATINUM AND 5FU WITH RADIATION FOLLOWED BY SURGERY	ACTIVE	0

## COLON CANCER SURVEILLANCE

THE QUESTION WHICH ALWAYS ARISES IS HOW TO FOLLOW A PATIENT WHO HAS HAD A DIAGNOSIS OF COLON CANCER. HOW OFTEN DO YOU SEE THEM AND WHAT BLOOD TESTS OR X-RAYS DO THEY NEED? RECOMMENDATIONS HAVE

BEEN ESTABLISHED BASED ON EVIDENCE BASED MEDICINE. BELOW ARE THE SURVEILLANCE GUIDELINES FOR PATIENTS HAVING COMPLETED PRIMARY TREATMENT OF COLORECTAL CANCER. THESE GUIDELINES WERE ESTABLISHED BY THE

AMERICAN SOCIETY OF CLINICAL ONCOLOGY AND PUBLISHED IN THE JOURNAL OF CLINICAL ONCOLOGY, OCTOBER 15, 2000 VOLUME 18 NUMBER 20 PAGES-3586-3588.

PROCEDURE	FREQUENCY
HISTORY AND PHYSICAL EXAMINATION	EVERY 3-6 MONTHS FOR THE FIRST 3 YEARS, ANNUALLY THEREAFTER
CEA	IF RESECTION OF LIVER METASTASES IS CLINICALLY INDICATED, IT IS RECOMMENDED THAT A POSTOPERATIVE CEA TESTING BE PERFORMED EVERY 2-3 MONTHS IN STAGE II AND III DISEASE FOR 2 YEARS AFTER DIAGNOSIS. AN ELEVATED CEA THAT IS CONFIRMED WARRANTS FURTHER EVALUATION FOR METASTATIC DISEASE BUT DOES NOT JUSTIFY THE INSTITUTION OF SYSTEMIC THERAPY FOR PRESUMED DISEASE.
CAT SCAN (ROUTINE TESTING)	NOT RECOMMENDED
CHEST X-RAY (ROUTINE TESTING)	NOT RECOMMENDED
COLONOSCOPY	COLONOSCOPY FOR PERI-OPERATIVE EVALUATION, THEN EVERY 3-5 YEARS TO DETECT NEW CANCERS
MRI, PET SCANS	NO CURRENT RECOMMENDATIONS ARE MADE REGARDING THESE METHODS IN THE USE OF POST-OP SURVEILLANCE

# COLORECTAL CANCER SURVEILLANCE GUIDELINES

RECENT DATA ESTIMATES THAT 131,000 AMERICANS WERE DIAGNOSED WITH COLON CANCER IN 1997 AND THAT 55,000 DIED OF THE DISEASE. COLON CANCER IS SECOND ONLY TO LUNG CANCER AS THE LEADING CAUSE OF CANCER-RELATED DEATHS IN THE UNITED STATES. IN 1996, RECOMMENDATIONS FOR COLON CANCER SCREENING WERE DEVELOPED AND PUBLISHED WITH THE COLLABORATIVE INPUT OF ALL THE MAJOR MEDICAL ASSOCIATIONS. SINCE 1998, MEDICARE INSTITUTED COVERAGE FOR SCREENING FOR COLON CANCER IN AVERAGE RISK PATIENTS OVER THE AGE OF 50 YEARS OF AGE.

SUCCESSFUL SCREENING FOR COLON CANCER REVOLVES AROUND THE KNOWLEDGE GAINED FROM STUDIES THAT HAVE DEFINED THE POLYP TO CANCER GROWTH PATHWAY. TO REDUCE COLON CANCER RISK, STUDIES TO DATE HAVE SHOWN THAT ANY FORM OF SCREENING IS BETTER THAN NO SCREENING AT ALL. ALL MODALITIES INCLUDING FECAL OCCULT BLOOD TESTS AND ATTEMPTS TO REMOVE POLYPS BY DETECTION WITH FLEXIBLE SIGMOIDOSCOPY, BARIUM ENEMA, OR COLONOSCOPY HAVE BEEN SHOWN TO BE COST EFFECTIVE AND TO REDUCE COLON CANCER RISK BY AS MUCH AS 30-40% IN PATIENTS WHO ARE REGULARLY SCREENED. WHICH TEST OR COMBINATION OF TESTS TO PERFORM HAS LEAD TO CONTINUING CONTROVERSY AND ONGOING STUDIES.

## THE CURRENT RECOMMENDATIONS FOR COLON CANCER SURVEILLANCE ARE:

### 1. AVERAGE RISK PATIENT

AVERAGE RISK PATIENTS ARE DEFINED AS PATIENTS WITHOUT A HISTORY OF INFLAMMATORY BOWEL DISEASE OR A PERSONAL OR FAMILY HISTORY OF COLON CANCER OR POLYPS. CANCERS FOUND IN AVERAGE RISK PATIENTS MAKE UP OVER 75% OF ALL COLON CANCERS. AVERAGE RISK PATIENTS WHO ARE 50 YEARS AND OLDER NEED FOBT (FECAL OCCULT BLOOD TEST) YEARLY AND FLEXIBLE SIGMOIDOSCOPY EVERY 5 YEARS. AN ALTERNATIVE MODALITY IS TO DO A DOUBLE-CONTRAST BARIUM ENEMA EVERY 5-10 YEARS OR COLONOSCOPY EVERY 10 YEARS. NOTE: MEDICARE AT THE PRESENT TIME DOES NOT REIMBURSE FOR COLONOSCOPY FOR AVERAGE RISK PATIENT SCREENING.

### 2. MODERATE RISK PATIENT

A. DISCOVERY OF A POLYP (< 1 CM) BY SCREENING REQUIRES THAT THE ENTIRE COLON BE SURVEYED WITH COLONOSCOPY. COLONOSCOPY SHOULD BE REPEATED WITHIN 3 YEARS AND, IF NORMAL, PATIENT REVERTS TO AVERAGE RISK RECOMMENDATIONS.

B. DISCOVERY OF A LARGE POLYP (> 1 CM) OR MULTIPLE POLYPS REQUIRES A FOLLOW-UP COLONOSCOPY WITHIN 3 YEARS AND, IF NORMAL, A REPEAT COLONOSCOPY EVERY 5 YEARS.

C. DISCOVERY OF COLON CANCER REQUIRES A FOLLOW-UP COLONOSCOPY WITHIN 1 YEAR OF RESECTION. IF NORMAL, A REPEAT COLONOSCOPY SHOULD BE REPEATED WITHIN 3 YEARS. IF NORMAL STILL, REPEAT COLONOSCOPY SHOULD BE PERFORMED EVERY 5 YEARS.

D. PATIENTS WITH A FAMILY HISTORY OF COLON CANCER MAKE UP 15-20% OF ALL CASES OF COLORECTAL CANCER. HISTORY OF FIRST-DEGREE RELATIVES WITH COLON CANCER DIAGNOSED BEFORE THE AGE OF 60 OR TWO OR MORE FIRST-DEGREE RELATIVES WITH COLON CANCER REQUIRE SCREENING WITH COLONOSCOPY AT THE AGE OF 40 OR 10 YEARS BEFORE THE YOUNGEST CASE OF CANCER IN THE FAMILY, WHICHEVER COMES FIRST. COLONOSCOPY SHOULD THEN BE REPEATED EVERY 5 YEARS.

### 3. HIGH RISK PATIENT

A. HEREDITARY NONPOLYPOSIS COLORECTAL CANCER (HNCC) REFERS TO AN AUTOSOMAL DOMINANT GENETIC FORM OF COLORECTAL CANCER. ALMOST 75% OF PATIENTS WITH THIS GENETIC MUTATION DEVELOP CANCERS TYPICALLY AT 40-50 YEARS OF AGE. THESE PATIENTS MAKE-UP 3-8% OF ALL COLORECTAL CANCERS; 75% OF CANCERS ARE SPORADIC OR FOUND IN AVERAGE RISK PATIENTS. GENETIC TESTING IS NOW AVAILABLE TO DETECT PATIENTS AT RISK. CLINICAL SUSPICIONS FOR HNCC WOULD INCLUDE 3 OR MORE FAMILY MEMBERS WITH COLON CANCER, CANCER AFFECTING TWO GENERATIONS, OR CANCER DIAGNOSED BEFORE THE AGE OF 50. GENETIC COUNSELING AND SCREENING COLONOSCOPY SHOULD BEGIN AT AGE 21 IN PATIENTS WITH HNCC. COLONOSCOPY SHOULD BE REPEATED EVERY TWO YEARS TO AGE 40, THEN EVERY YEAR THEREAFTER.

B. FAMILIAL ADENOMATOUS POLYPOSIS (FAP) REFERS TO AN AUTOSOMAL DOMINANT DEFECT ON THE ADENOMATOUS POLYPOSIS COLI (APC) GENE. PATIENTS WITH FAP ACCOUNT FOR 1% OF ALL CASES OF COLORECTAL CANCER. TYPICALLY, PATIENTS HAVE HUNDREDS OF POLYPS AND DEVELOP COLORECTAL CANCER BY AGE 40. MUTATION OF THE APC GENE MAY OCCUR SPONTANEOUSLY ACCOUNTING FOR SOME PATIENTS WHO MAY NOT HAVE A FAMILY BACKGROUND OF POLYPOSIS. PATIENTS WITH FAP ALSO DEVELOP A VARIETY OF EXTRACOLONIC TUMORS INCLUDING DUODENAL ADENOMAS OR CARCINOMAS AND DESMOID TUMORS. CANCER SURVEILLANCE RECOMMENDATIONS INCLUDE GENETIC COUNSELING AND COLONOSCOPY BEGINNING AT PUBERTY. COLONOSCOPY SHOULD BE REPEATED EVERY 1-2 YEARS. IF GENETIC COUNSELING IS POSITIVE, OR POLYPS ARE FOUND, COLECTOMY SHOULD BE CONSIDERED.

C. INFLAMMATORY BOWEL DISEASE. ALTHOUGH THERE IS INCREASED RISK OF COLON CANCER IN CROHN'S DISEASE, PATIENTS WITH

ULCERATIVE COLITIS HAVE A MARKEDLY INCREASED RISK AFTER 8 YEARS OF DISEASE. CANCERS RELATED TO INFLAMMATORY BOWEL DISEASE MAKE UP 1% OF ALL CASES OF COLORECTAL CANCER. SCREENING COLONOSCOPY WITH BIOPSIES IS RECOMMENDED BEGINNING AT 8 YEARS OF DISEASE IN PATIENTS WITH PANCOLITIS AND AT 12 YEARS OF DISEASE IN PATIENTS WHO HAVE LEFT-SIDED COLITIS. COLONOSCOPY SHOULD BE REPEATED THEREAFTER EVERY 1-2 YEARS.

CONTROVERSIES RELATED TO SCREENING MODALITIES ARE MANY. THE CURRENT RECOMMENDATIONS, FOR EXAMPLE, ALLOW THE OPTION OF AN AIR-CONTRAST BARIUM ENEMA AS A SUBSTITUTE FOR COLONOSCOPY. STUDIES HAVE REPEATEDLY SHOWN THAT COLONOSCOPY IS THE SUPERIOR TEST. IT AVOIDS THE NEED FOR DUPLICATE PROCEDURES WHEN A BARIUM ENEMA IS INCONCLUSIVE, IT ALLOWS REMOVAL OF POLYPS AND RETRIEVAL OF BIOPSY MATERIAL FOR DIAGNOSIS, AND IS BETTER ABLE TO DETECT SUBTLE ABNORMALITIES IN THE COLON. MORE RECENT STUDIES HAVE SUGGESTED THAT A FLEXIBLE SIGMOIDOSCOPY IS AN INSUFFICIENT TEST FOR COLON CANCER SCREENING, SINCE COLON CANCER OCCURS WITH EQUAL FREQUENCY IN AREAS THAT THE FLEXIBLE SCOPE CAN'T REACH. WOULD YOU DO HALF OF A MAMMOGRAM? OBVIOUSLY NOT, SO IT WOULD SEEM THAT A FLEXIBLE SIGMOIDOSCOPY MAY BE JUST AS INADEQUATE AND COLONOSCOPY SHOULD BE THE GOLD STANDARD FOR SCREENING THE ENTIRE COLON.

ALTHOUGH NOT PERFECT, THE CURRENT GUIDELINES FOR COLON CANCER SCREENING ARE CERTAINLY CLEAR AND WORKABLE FOR THE AVERAGE PRACTITIONER. TO BE SURE, RESEARCH IN THE AREA OF COLON CANCER SURVEILLANCE IS FEVERISH. SCREENING THE COLON FOR TUMOR PROTEINS, USE OF HIGH DEFINITION CT SCANS WITH VIRTUAL REALITY, AND ENDOSCOPIC ULTRASOUND TECHNIQUES MAY BE NEW TOOLS IN THE FUTURE TO HELP DETECT AND PREVENT COLON CANCER. AS FOR THE YEAR 2001, WE NEED TO EDUCATE THE PUBLIC TO ACCEPT COLON CANCER SCREENING AS A REGULAR PART OF HEALTH MAINTENANCE, JUST AS MAMMOGRAMS, PAP SMEARS, AND REGULAR CHECK-UPS FOR BLOOD PRESSURE, CHOLESTEROL, GLUCOSE AND PSA HAVE BEEN ACCEPTED. UNFORTUNATELY, IT IS ESTIMATED THAT ONLY 10-30% OF AMERICANS OVER 50 YEARS OF AGE UNDERGO ANY REGULAR SCREENING FOR COLON CANCER. ALTHOUGH CURRENT GUIDELINES MAY HAVE CONTROVERSIAL ISSUES, ALL STUDIES SUGGEST THAT ANY FORM OF SCREENING IS BETTER THAN NONE. WE, AS PHYSICIANS AND HEALTH CARE PROFESSIONALS, NEED TO ENCOURAGE AND EDUCATE OUR PATIENTS ABOUT THE POTENTIAL BENEFITS OF COLON CANCER SURVEILLANCE AS WE ENTER THE NEW MILLENNIUM.

# JOURNAL WATCH

IN EACH ISSUE OF OUR NEWSLETTER WE WILL HIGHLIGHT THOSE ONCOLOGY ARTICLES THAT APPEARED IN THE FIVE MAJOR INTERNAL MEDICINE JOURNALS OVER THE PRECEDING MONTHS. WE HOPE THAT THIS WILL KEEP YOU ABREAST OF CHANGES THAT ARE OCCURRING IN THE FIELD.

1. INCIDENCE TRENDS FOR COLORECTAL CANCER IN CALIFORNIA: IMPLICATIONS FOR CURRENT SCREENING PRACTICES, AMERICAN JOURNAL OF MEDICINE-VOLUME 109 ISSUE 4 SEPTEMBER 2000-PAGES 277-281  
*CONCLUSION: THE INCIDENCE OF COLORECTAL CANCER IN CALIFORNIA IS DECREASING, PARTICULARLY FOR LEFT SIDED (DISTAL) TUMORS. CURRENT SCREENING RECOMMENDATIONS, WHICH EMPHASIZE EXAMINATION OF THE DISTAL COLON, MAY NEED TO BE EXPANDED TO INCLUDE THE ENTIRE COLON.*
2. REGRESSION OF METASTATIC RENAL-CELL CARCINOMA AFTER NONMYELOABLATIVE ALLOGENEIC PERIPHERAL-BLOOD STEM CELL TRANSPLANTATION, THE NEW ENGLAND JOURNAL OF MEDICINE-VOLUME 343 NUMBER 11 SEPTEMBER 14, 2000 PAGES 750-758.  
*CONCLUSION: NONMYELOABLATIVE ALLOGENEIC STEM CELL TRANSPLANTATION CAN INDUCE SUSTAINED REGRESSION OF METASTATIC RENAL CELL CARCINOMA IN PATIENTS WHO HAVE HAD NO RESPONSE TO CONVENTIONAL IMMUNOTHERAPY.*
3. CANCER IMMUNOTHERAPY WITH ALLOREACTIVE LYMPHOCYTES, NEW ENGLAND JOURNAL OF MEDICINE-VOLUME 343 NUMBER 11 SEPTEMBER 14, 2000 PAGES 802-803  
*THIS PAPER IS THE EDITORIAL FOR THE ABOVE ARTICLE DISCUSSING THE BASIS OF THIS TREATMENT.*
4. A RANDOMIZED TRIAL OF POSTOPERATIVE ADJUVANT THERAPY IN PATIENTS WITH COMPLETELY RESECTED STAGE II OR IIIA NON-SMALL CELL LUNG CANCER, THE NEW ENGLAND JOURNAL OF MEDICINE-VOLUME 343 NUMBER 17, OCTOBER 26, 2000, PAGES 1217-1222  
*CONCLUSION: AS COMPARED WITH RADIOTHERAPY ALONE, ADJUVANT RADIOTHERAPY AND CHEMOTHERAPY WITH CISPLATIN AND ETOPOSIDE DOES NOT DECREASE THE RISK OF INTRATHORACIC RECURRENCE OR PROLONG SURVIVAL IN PATIENTS WITH COMPLETELY RESECTED STAGE II OR IIIA NON SMALL-CELL LUNG CANCER.*
5. NON-SMALL-CELL LUNG CANCER-STALEMATE OR PROGRESS, THE NEW ENGLAND JOURNAL OF MEDICINE VOLUME 343 NUMBER 17 OCTOBER 26, 2000, PAGES 1261-1263.  
*EDITORIAL DISCUSSING THE ROLE OF CHEMOTHERAPY IN THE TREATMENT OF NON-SMALL CELL LUNG CANCER.*
6. IRINOTECAN PLUS FLUOROURACIL AND LEUCOVORIN FOR METASTATIC COLON CANCER, THE NEW ENGLAND JOURNAL OF MEDICINE, VOLUME 343 NUMBER 13, SEPTEMBER 28, 2000 PAGES 905-914  
*CONCLUSION: WEEKLY TREATMENT WITH IRINOTECAN PLUS FLUOROURACIL AND LEUCOVORIN IS SUPERIOR TO A WIDELY USED REGIMENT OF FLUOROURACIL AND LEUCOVORIN FOR METASTATIC COLORECTAL CANCER IN TERMS OF PROGRESSION-FREE AND OVERALL SURVIVAL.*
7. MOVING BEYOND FLUOROURACIL FOR COLORECTAL CANCER, THE NEW ENGLAND JOURNAL OF MEDICINE, VOLUME 343, NUMBER 13, SEPTEMBER 28, 2000, PAGES 963-964  
*CONCLUSION: ROLE FOR CHEMOTHERAPY IN TREATMENT OF METASTATIC COLON CANCER.*
8. PREVENTION AND TREATMENT OF COLON CANCER: PAY NOW OR PAY LATER, ANNALS OF INTERNAL MEDICINE, VOLUME 133 NUMBER 8, OCTOBER 17, 2000, PAGES 647-649  
*CONCLUSION: SUPPORTS THE ROLE FOR SCREENING COLONOSCOPIES.*
9. COST-EFFECTIVENESS OF COLONOSCOPY IN SCREENING FOR COLORECTAL CANCER, ANNALS OF INTERNAL MEDICINE, VOLUME 133 NUMBER 6, OCTOBER 17, 2000, PAGES 573-584.  
*CONCLUSION: COLONOSCOPY REPRESENTS A COST EFFECTIVE MEANS OF SCREENING FOR COLORECTAL CANCER BECAUSE IT REDUCES MORTALITY AT RELATIVELY LOW INCREMENTAL COSTS. LOW COMPLIANCE RATES RENDER COLONOSCOPY EVERY 10 YEARS THE MOST COST EFFECTIVE PRIMARY SCREENING STRATEGY FOR COLORECTAL CANCER.*
10. COMPARATIVE EFFICIENCY OF PROSTATE-SPECIFIC ANTIGEN SCREEN STRATEGIES FOR PROSTATE CANCER DETECTION, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, VOLUME 284 NUMBER 11, SEPTEMBER 20, 2000, PAGES 1399-1405  
*CONCLUSION: RECOGNIZING THAT THE EFFICACY OF PSA SCREENING IS UNPROVED, THE STANDARD STRATEGY OF ANNUAL PSA SCREENING BEGINNING AT AGE 50 YEARS APPEARS TO BE LESS EFFECTIVE AND MORE RESOURCE INTENSIVE COMPARED WITH A STRATEGY THAT BEGINS EARLIER BUT SCREEN BIENNIALY INSTEAD OF ANNUALLY.*
11. COST-EFFECTIVENESS OF SCREENING FOR COLORECTAL CANCER IN THE GENERAL POPULATION, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, VOLUME 284, NUMBER 15, OCTOBER 18, 2000 PAGES 1954-1961  
*CONCLUSION: SCREENING FOR CRC, EVEN IN THE SETTING OF IMPERFECT COMPLIANCE, SIGNIFICANTLY REDUCES CRC MORTALITY AT COSTS COMPARABLE TO OTHER CANCER SCREENING PROCEDURES.*